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VCE Board of Directors Meeting – September 12, 2024



VALLEY
CLEAN ENERGY

Item 14 - Introduction and update on Virtual Power Plants (VPP)

Public Comments

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Item 14 – Virtual Power Plants: Meet your Intern: Catherine Rowen



From Santa Cruz, California



RIT | Rochester Institute
of Technology

Masters in Sustainable Systems '22



UC DAVIS
UNIVERSITY OF CALIFORNIA

Masters in Community Development '25



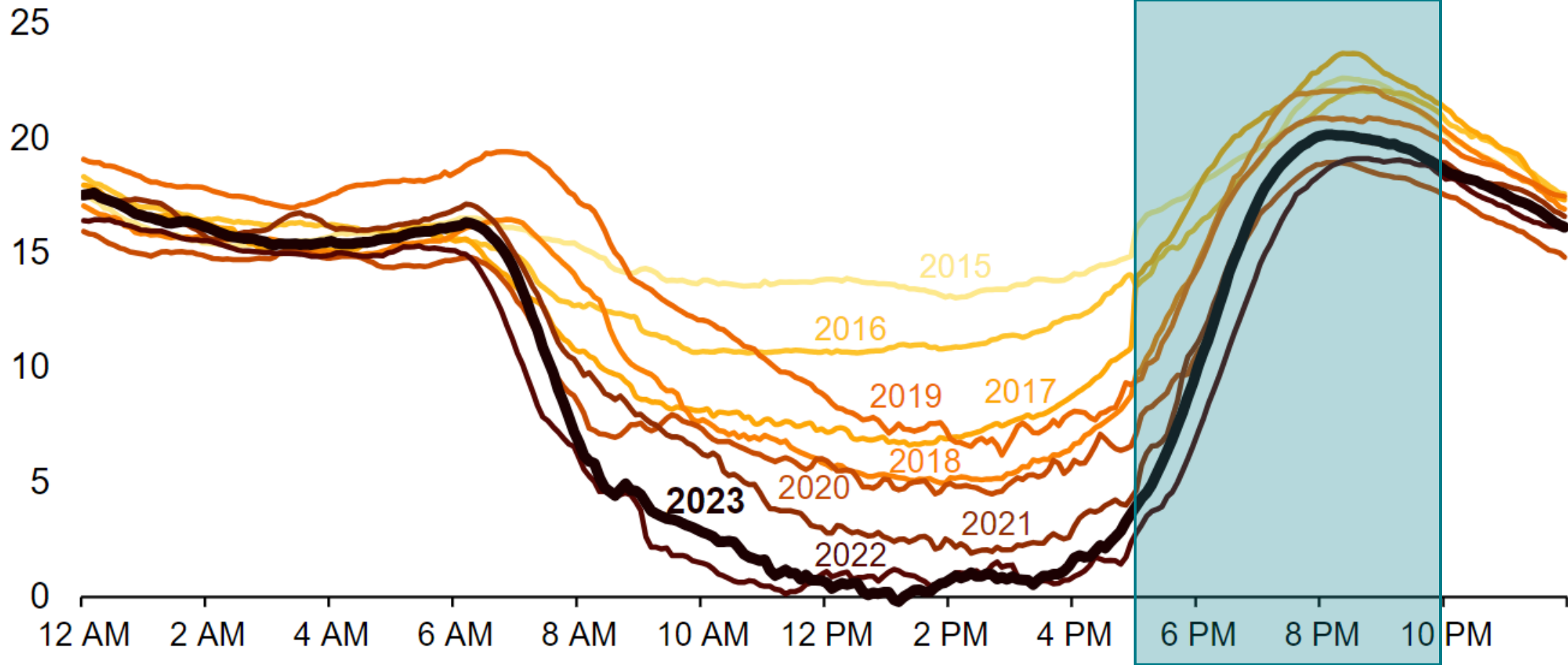
Post grad plan: work in programs at a CCA!



Item 14 – Virtual Power Plants: California needs to “Flatten the Curve”

California's duck curve is getting deeper

CAISO lowest net load day each spring (March–May, 2015–2023), gigawatts



Source: [EIA 2023](#)



Item 14 – Virtual Power Plants: Demand Response in California

2022

Estimated enrollment:
3,100–3,1400 MW in
demand response
programs

2030

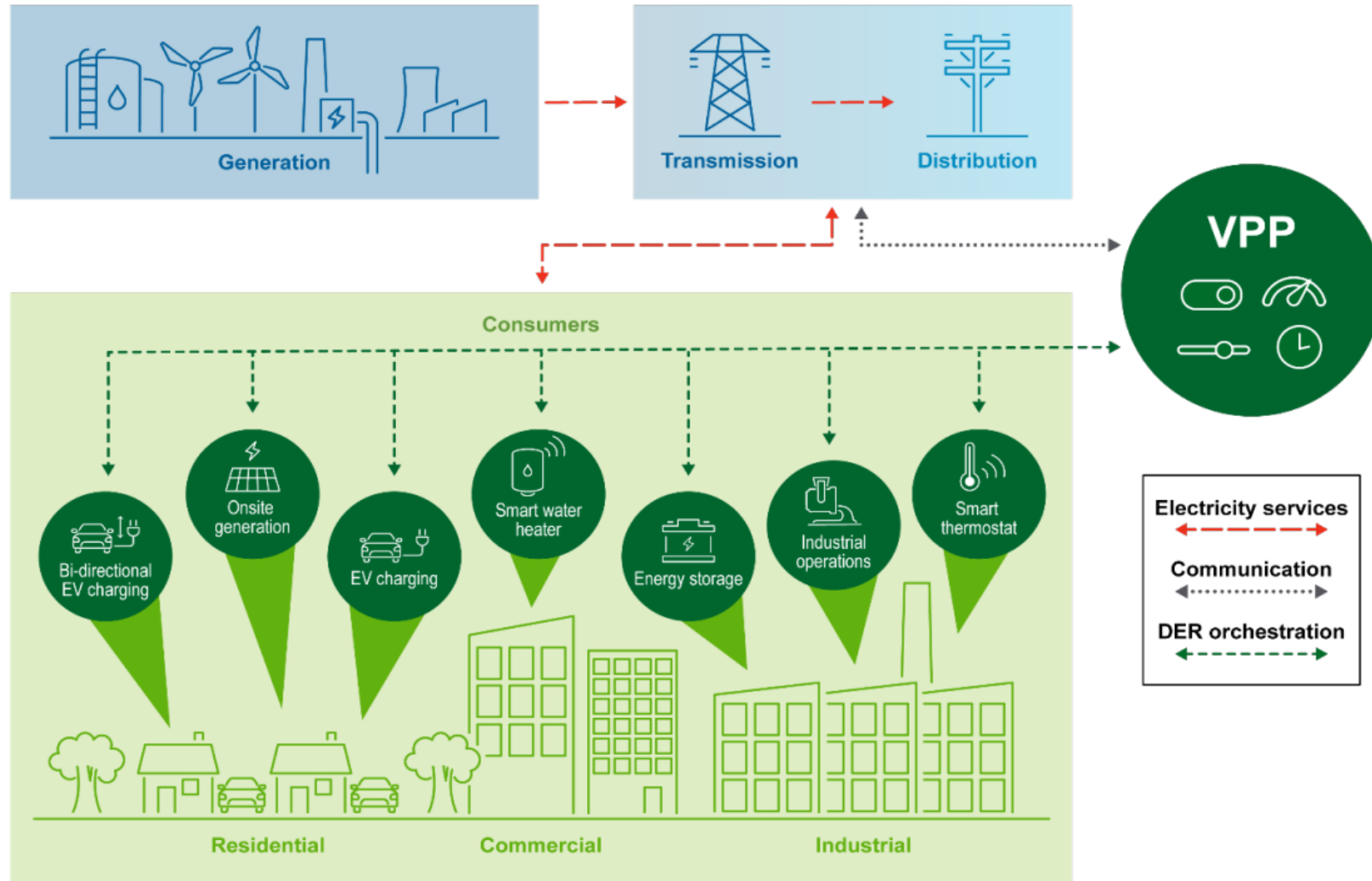
Statewide goal:
7,000 MW of flexible load
shifting capacity



Item 14 – Virtual Power Plants: Harness DERs for the Grid

VPPs are aggregations of grid-connected Distributed Energy Resources (DERs) that can be dispatched as one resource to balance loads and provide grid services

(Adapted from [DOE](#) and Wood Mackenzie definitions)



Source: [DOE Pathways to Commercial Liftoff](#)

Item 14 – Virtual Power Plants: Benefits to the Grid and to Society



Resource adequacy

- Integrate distributed generation and storage capacity
- Shift demand to follow supply

Affordability

- Defer grid capex (generation, T & D)
- Avoid fuel costs
- Compensate consumers and businesses

Reliability & resilience

- Integrate back-up power
- Eliminate single-point-of-failure

Decarbonization & air pollution reduction

- Add distributed renewable generation
- Reduce curtailment of renewables
- Reduce reliance on fossil fuels

T & D infrastructure relief

- Increase efficiency by smoothing peaks
- Alleviate congestion with local dispatch

Community empowerment

- Enable consumers to optimize energy cost, use, and source
- Retain and create good jobs

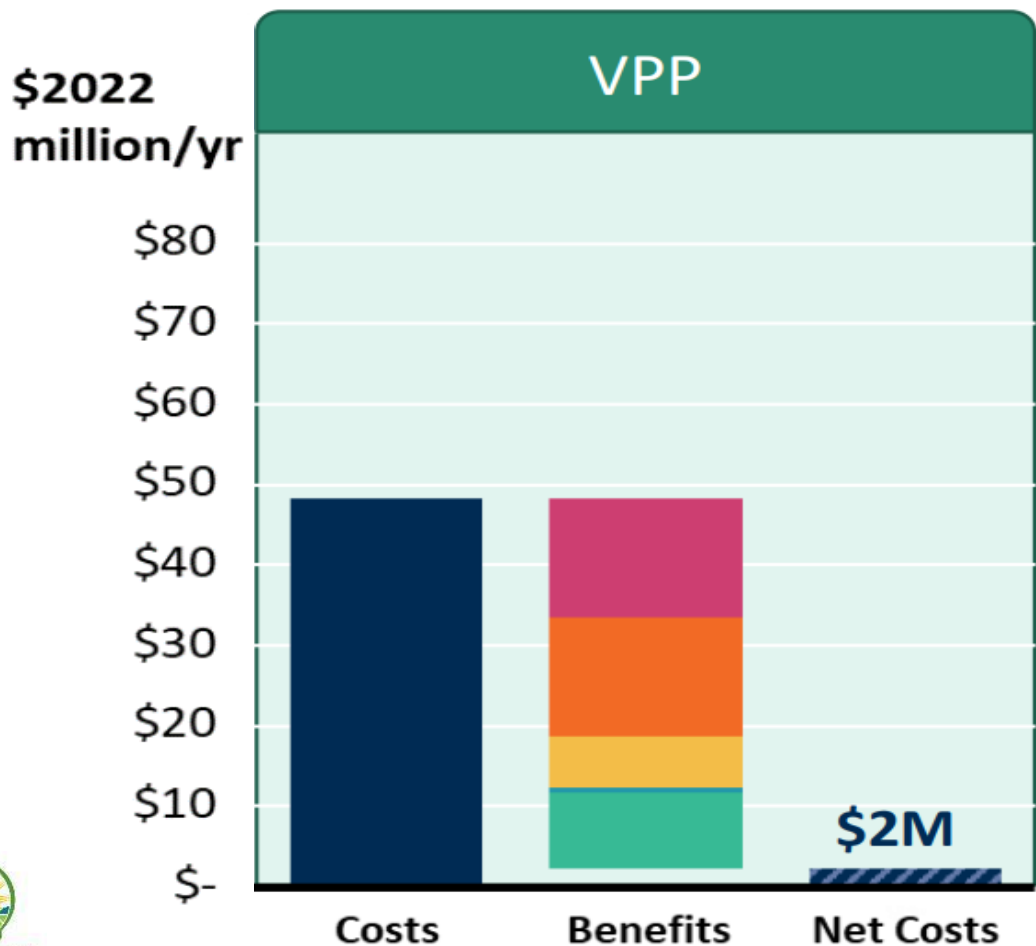
Versatility & flexibility

- Customize design to fit grid needs
- Reconfigure as needs evolve

Source: [DOE Pathways to Commercial Liftoff](#)

Item 14 – Aggregating DERs: What are the True Benefits to VCE?

Cost per year of 400 MW of Resource Adequacy



- Emissions
- Resilience
- Distribution
- Transmission
- Ancillary Services
- Energy
- Resource Adequacy

Value for VCE



Source: [Brattle Group](#) 2023

Item 14 – Virtual Power Plants: Supply-side v Load Modifying VPPs

Supply Side VPP

Selling resources and services on the market

Expensive to participate in market

Regulatory limit on use for resource adequacy



Load Modifying VPP

Reducing load locally, not monetizing services

Save money on energy purchases

Reduce obligations for resource adequacy



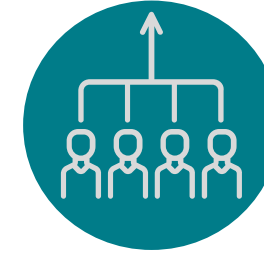
Item 14 – Organizational Models for Load Modifying VPPs



In-house Operation



Third Party Operator



Flexibility Market

Benefits

Data access
No contractor costs
High program control

Access to expertise
Low staff time

Adaptable
Tech inclusive
Low staff time

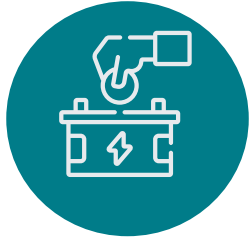
Cost

High staff time
High complexity

Mid-high contractor
expenses

High contractor
expenses
Low program
oversight/control

Item 14 – Virtual Power Plants: CEC Support for Aggregated DER

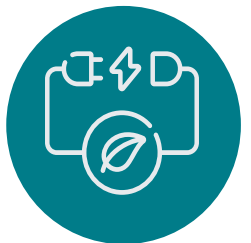


Grant: Virtual Power Plant Approaches for Demand Flexibility

\$21,000,000 for community-based automated VPPs

VCE plans 1 MW VPP with UC Davis and PG&E

Using real-time-price data to time deployment



Demand Side Grid Support Program

Two programs available to CCA customers through aggregators:

Incentives for market-integrated demand response

Payment for BTM battery VPP triggered by market price spikes

Item 14 – Ongoing Research: the value of a VPP for VCE

Goal

Activities

1

Determine potential **program designs** for CCA VPPs

Background research

Interviews on CCA VPPs

Survey of CCA VPP programs

2

Estimate **VPP potential** in Yolo County

Analyze rate enrollment data

Survey VCE customers on DER installation, VPP interest

3

Report on **strategic VPP pathways** for VCE

Present value and tradeoffs of lowest cost VPP designs

Item 14 – Virtual Power Plants: References

- California Energy Commission. “Light-Duty Vehicle Population in California.” California Energy Commission, current-date. <https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/light>.
- Coignard, Jonathan, Samveg Saxena, Jeffery Greenblatt, and Dai Wang. “Clean Vehicles as an Enabler for a Clean Electricity Grid.” *Environmental Research Letters* 13, no. 5 (May 2018): 054031. <https://doi.org/10.1088/1748-9326/aabe97>.
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- Gerke, Brian F., Giulia Gallo, Sarah J. Smith, Jingjing Liu, Peter Alstone, Shuba Raghavan, Peter Schwartz, Mary Ann Piette, Rongxin Yin, and Sofia Stensson. “The California Demand Response Potential Study, Phase 3: Final Report on the Shift Resource through 2030,” 2020. <https://doi.org/10.20357/B7MS40>.
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- Hledik, Ryan, and Kate Peters. “Real Reliability: The Value of Virtual Power.” Brattle Group, May 2023.
- Hledik, Ryan, Kate Peters, and Sophie Edelman. “California’s Virtual Power Potential: How Five Consumer Technologies Could Improve the State’s Energy Affordability.” Brattle Group, 2024.
- Neumann, Ingrid, and Erik Lyon. “SB 846 Load Shift Goal Commission Report.” California Energy Commission, 2023.
- NREL. “Modeling Distributed Generation in California.” California Energy Commission, 2024. <https://www.energy.ca.gov/sites/default/files/2024-07/CEC-200-2024-011.pdf>.

Thank you!

Questions?

Catherine Rowen

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VCE Board of Directors Meeting – September 12, 2024



Item 15 – VCE 2024-2026 Outreach & Marketing Plan Outline

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Item 15 – VCE 2024-2026 Outreach & Marketing Plan Outline

Background & Purpose

- First Outreach and Marketing Plan 2021
 - Following 2020 Strategic Plan
 - Link between Strategic Plan and Outreach and Marketing priorities, implementation, and day-to-day staff workflow
 - Complementary to Programs Plan (2021)



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Item 15 – VCE 2024-2026 Outreach & Marketing Plan Outline

Progress Since 2021 Plan

- 93% Completion or In-Progress (vast majority having been completed)
- Some items became obsolete or were modified due to changing market conditions
- Many items are planned to continue or move on to next phase of existing goals/tactics, etc.

2021 Outreach and Marketing Plan

Goal 1: Increase customer satisfaction and retention

| Name | Subitems | Strategic Plan Objective | Status | Goal details |
|---|--|---|---------------|---|
| Better understand the needs/wants of customers and member communities | Improve customer analytics and data, Customer personas, Develop customer and marketing dashboards, Analyze data from different jurisdictions | Objective 3.1: Develop engagement strategies to increase awareness of, and participation in, local control of VCE's energy supply and programs with a particular focus on engaging disadvantaged and historically marginalized communities. | Done | VCE has made significant progress on this goal. We developed several engagement strategies, including for ERRO program, AgFIT Program and EV Rebate Program. We have advertised openings on the CAC to encourage local control, as well as advertising Board meetings and CAC meetings. VCE crafted an Environmental Justice Statement. |
| Subitems | Name | | Status | Notes & Examples |
| | Improve customer analytics and data | | Done | |
| | Customer personas | | Not Done | VCE has not yet developed customer personas but may do so as part of the outreach for focus groups and surveys 2024-2026. |
| | Develop customer and marketing dashboards | | Done | |
| | Analyze data from different jurisdictions | | Done | |
| Increase awareness of VCE's brand | Advertising, Word-of-mouth campaigns, Swag, Co-marketing/branding with trusted | | Done | VCE invested in bus ads in English and Spanish and has translated most customer-facing material into Spanish. VCE developed special swag for the 5-year anniversary and shared it with customers and |
| Subitems | Name | | Status | Notes & Examples |
| | Advertising | | Done | Staff engaged in successful advertising, and will look into advertising campaigns for 2024-2026, which may include bus ads and billboards, as well as podcasts. |
| | Word-of-mouth campaigns | | Done | This goal was mostly achieved, and staff will continue to work on it. Lawn signs were deployed, and the AgFIT program was marketed successfully by word-of-mouth. |
| | Swag | | Done | VCE developed special swag for the 5-year anniversary celebrations, including branded Bluetooth speakers, socks, and cell phone chargers. Staff also maintained current stocks of popular swag, including tote |

Item 15 – VCE 2024-2026 Outreach & Marketing Plan Outline

Outreach: Meeting Our Customers Where They Are



Photos:
YvonneHunterPhotography.com



2023 Events: 8 events; 10,000+ people reached (including media, in-person)



2023 Media: 6 press releases, 8 press placements, 2 op-eds, 200 media contacts



Customer inquiries: rapid, tailored responses with emphasis on authenticity and engagement

Item 15 – VCE 2024-2026 Outreach & Marketing Plan Outline

2023 Website Analytics: Page Views & Engagement

| Page title and screen class | ↓ Views | Users | Views per user | Average engagement time |
|--|-------------------------|-------------------------|----------------|-------------------------|
| | 77,379 100% of total | 20,433 100% of total | 3.79 Avg 0% | 1m 33s Avg 0% |
| 1 (not set) <i>(Likely VCE Home)</i> | 13,680 | 862 | 15.87 | 4m 23s |
| 2 Home - Valley Clean Energy | 12,957 | 7,245 | 1.79 | 36s |
| 3 VCE EV Rebates - Valley Clean Energy | 3,036 | 1,823 | 1.67 | 1m 03s |
| 4 Credits & Rebates - Valley Clean Energy | 2,949 | 1,869 | 1.58 | 41s |
| 5 Residential - Valley Clean Energy | 2,308 | 1,504 | 1.53 | 30s |
| 6 Board Meetings and Agendas - Valley Clean Energy | 2,087 | 617 | 3.38 | 2m 02s |
| 7 Opt out - Valley Clean Energy | 1,466 | 1,009 | 1.45 | 43s |
| 8 Understand your Bill - Valley Clean Energy | 1,378 | 1,077 | 1.28 | 44s |
| 9 RFPs / RFOs - Valley Clean Energy | 1,243 | 600 | 2.07 | 22s |
| 10 A Flexible Irrigation Pilot Program for Agriculture - Valley Clean Energy | 1,231 | 708 | 1.74 | 35s |

Average Time Spent on Websites

Across Industries: 53 seconds
(VCE: 1 minute 33 seconds)

E-Commerce Pages:

44 seconds-1
minute 22 seconds

Blog Posts: 2-5
minutes

Item 15 – VCE 2024-2026 Outreach & Marketing Plan Outline

New for 2024-2026

- Progress Since 2021
- Industry Peer Analyses
- Enhanced Analytics & Metrics
 - Brand voice, comms and brand strategy, hashtag strategy
- SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats)



Photo: YvonneHunterPhotography.com

Item 15 – VCE 2024-2026 Outreach & Marketing Plan Outline



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Proposed Goals:

1. Increase customer satisfaction and retention
2. Continue to Enhance VCE's Role as a Trusted Community Resource
3. Spotlight VCE's Role in Decarbonization and Grid Innovation

Item 15 – VCE 2024-2026 Outreach & Marketing Plan Outline

Next Steps:

1. Integrate Programs & Outreach Task Group, Community Advisory Committee (CAC), and Board feedback
2. Finalize plan
3. Return to CAC and Board with finalized plan



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VCE Board of Directors Meeting – September 12, 2024

Item 16 – Financial Outlook Update



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Item 16 – Financial Outlook (Update)

Overview

This report updates VCE's general financial position going into the second half of 2024 and outlines key factors that will help shape the 2025 Fiscal Year budget

This presentation will provide:

- Update 2024-25 Strategic Financial Activities (Timeline)
- Update on 2024 Operating Results and Multi-Year Forecast
- Update on Power Cost Management Strategies



1. Update 2024-25 Strategic Financial Activities (Timeline)

Item 16 – Financial Outlook (Update): 2024/2025 Timeline

2024/2025 Strategic Financial Activities (Timeline)

2024 Budget

- October 2024 – Preliminary Update - Includes additional power cost activities for RA & energy
- November 2024 – Budget Update
 - Includes updated ERRA (PCIA and PG&E Bundled Rates) proceeding
 - Includes additional Budget Scenarios for discussion and feedback
- December 2024 – Recommended 2025 VCE Customer Rates and Budget for Adoption

Pre-Payment Transaction – Approval January 2025

Investment Grade Credit Rating – Internal Evaluation for Initial credit rating in January 2025 (est. June 2025)

2024 Audited Financials – April 2025

Net Margin /Customer Dividend Allocation – May 2025

Strategic Plan Update – Major Update targeted September 2025

Item 16 – Financial Outlook (Update): 2024 Budget Development

2024 Rates & Budget Background: Key Financial Objectives

- **Operating Days Cash** – Maintain Board approved cash target of +180 days (Forecasted 2024)
- ✓ **Debt Repayments** – Early repayment of term loan with River City Bank in 2023. (Completed)
- **Power Cost Contingencies** –
 - Operational Contingency 5%/ \$3.6 M
 - \$1.5M budgeted for 2024 Resource Adequacy (RA) /Renewable Energy Certificates
- ✓ **Power Purchase Agreement (PPA) Covenants** – Maintain PPA covenants (no letters of credit)
- **Investment Grade Credit Rating** – Update Timeline (Possible 2025)
- ✓ **Customer Dividends and Programs**
 - ✓ ~\$2.2M/2% in customer dividends paid in rate discounts
 - ✓ ~1.2M/2.5% additional rate discounts for CARE/FERA cutomers
 - ✓ \$2M in programs budgeted for 2024

2. Update on 2024 Operating Results and Multi-Year Forecast

Item 16 – Financial Outlook (Update): Operating Results / Forecast

VCE Multi-Year Outlook

| Description | Actuals | | 2024 Proforma (7 Month Actuals + 5 Month Budget) | Preliminary Forecast* | | |
|------------------|---------|--------|--|-----------------------|--------|---------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
| Customer Revenue | 85,323 | 96,250 | 101,500 | 88,750 | 99,500 | 102,250 |
| Power Cost | 75,130 | 72,500 | 78,367 | 73,000 | 79,500 | 78,000 |
| Other Expenses | 4,469 | 6,100 | 6,250 | 7,350 | 7,800 | 8,200 |
| Net Income | 5,724 | 17,650 | 16,883 | 8,400 | 12,200 | 16,050 |
| Gross Margin | 12% | 25% | 23% | 18% | 20% | 24% |
| Net Margin | 7% | 18% | 17% | 9% | 12% | 16% |

{ Reserve Building (+180 Minimum) }
{ Net Margin Policy Targets }

Key Highlights

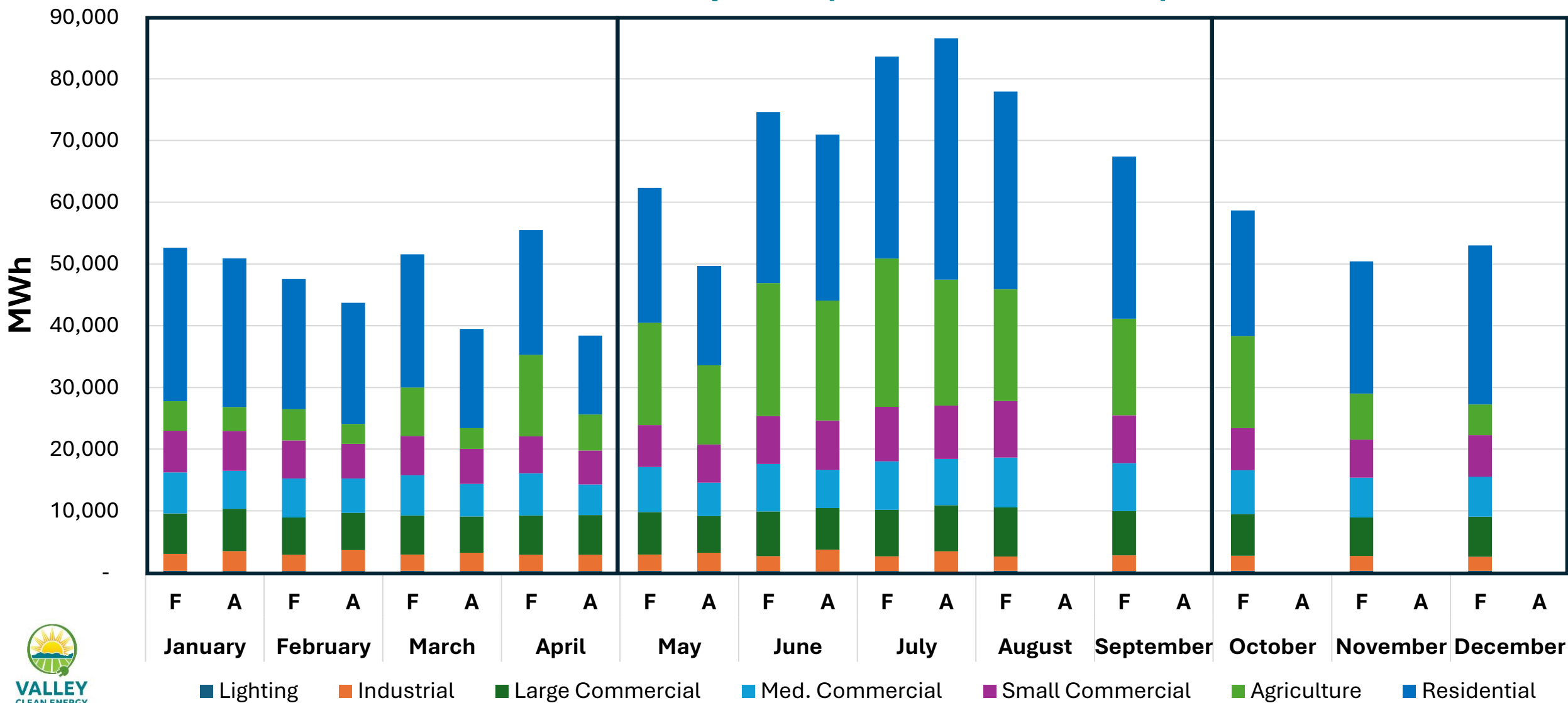
- VCE expects continued 2025 power cost volatility due to higher resource adequacy.
- VCE has the ability to continue cost mitigation by adjusting RPS (sell RECS), Net Margin, and reserve targets.



*The table does not account for increased power market prices, heat-wave or drought load impacts, renewable energy credits, and resource adequacy costs above 5% budgeted contingencies.

Item 16 –Financial Outlook (Update): 2024 VCE Retail Load

VCE Retail Load Update (Forecast v. Actual)



■ Lighting
 ■ Industrial
 ■ Large Commercial
 ■ Med. Commercial
 ■ Small Commercial
 ■ Agriculture
 ■ Residential

3. Update on Power Cost Management Strategies

Item 16 – Financial Outlook (Update): 2025 Power Costs

2025 Power Cost Outlook

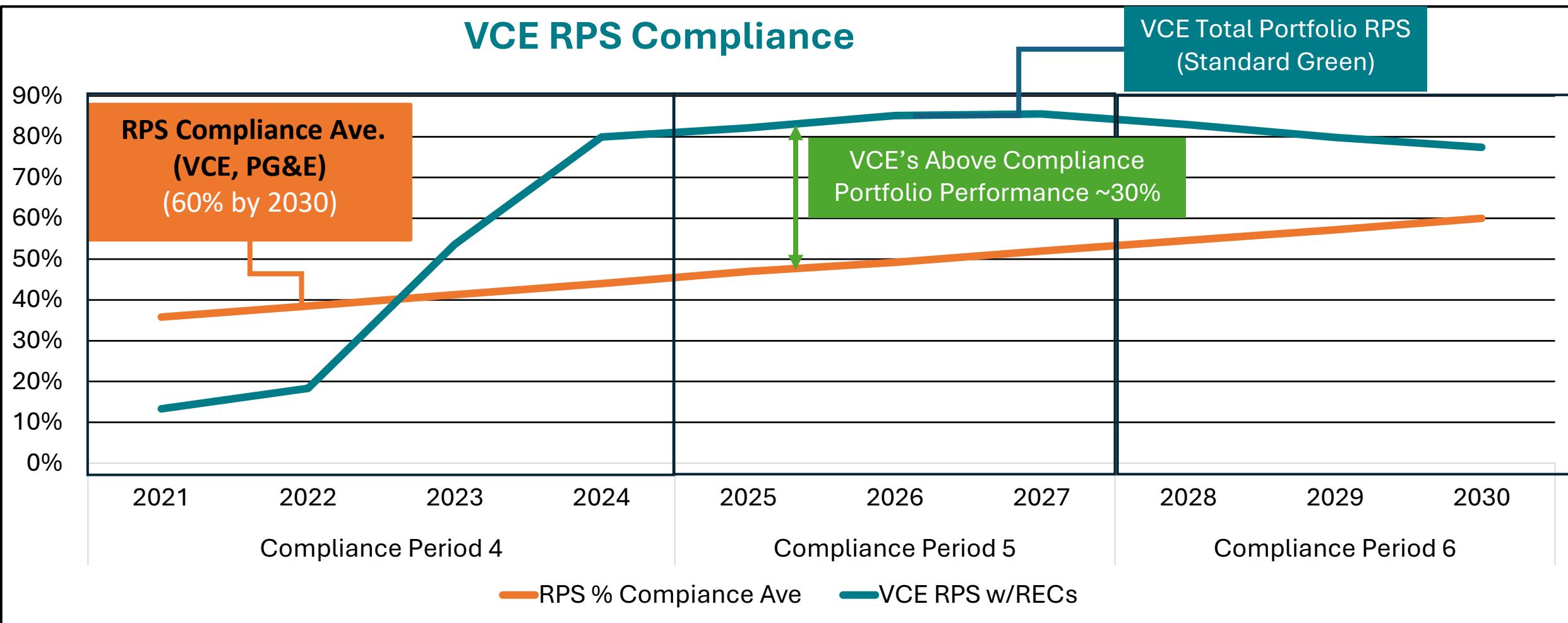
- Slice of Day Transactability (Hourly) - no trading (buy/sell) or swap market currently allowed
- Final Slice of Day decisions / allocations have been released
- Initial RA peak prices have continued for 2025. Forecasted to come down by end of 2027.
- Increased Power Costs → increase power cost trading collateral (cash or letters of credit)

2025 Power Cost Management Strategies (Reduce Costs)

- January 2025 – Board Approved Power Purchase Agreement Prepay Transaction – decrease overall power costs (Debt Policy)
- July 2025 – Board Approved Initial Sale of RECs to maintain positive net margin targets for 2025.
- Additional options:
 - Sell additional long positions of Renewable Energy Credits and Resource Adequacy - market value at all-time high (Procurement Policy)
 - Increased timeline for initial investment grade credit rating (2028 Strategic Plan Goal)

Item 16 – Financial Outlook (Update): Long-Term Power Costs

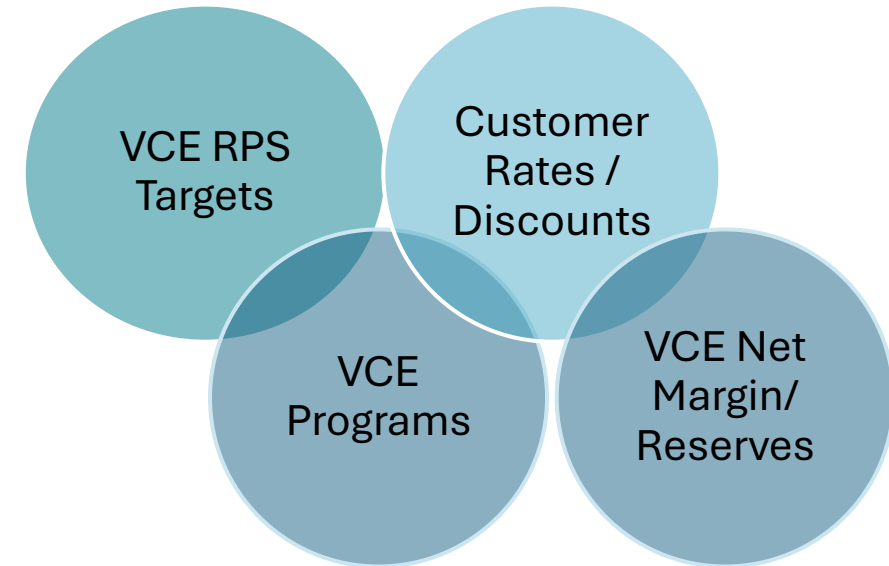
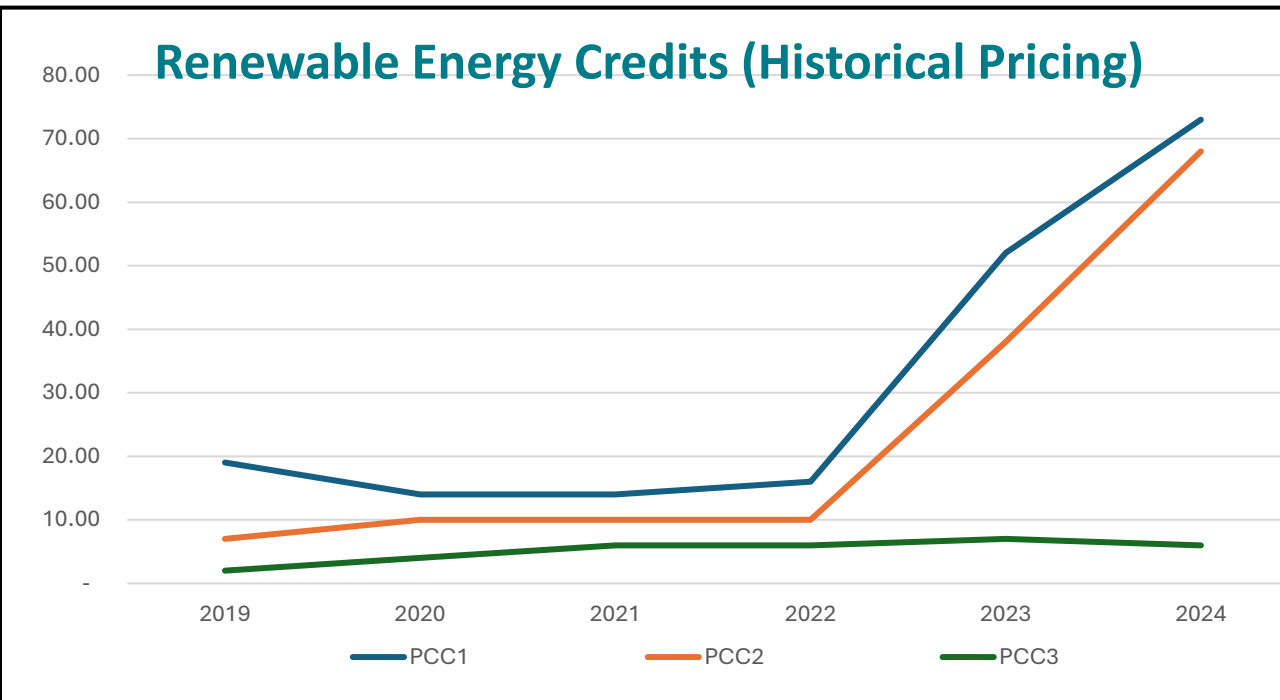
Power Cost Management Strategies (REC Example)



Note: VCE's long-term RPS forecast includes increasing load and current PPA agreements resulting in a lower total RPS%

Item 16 – Financial Outlook (Update): Long-Term Power Costs

Power Cost Management Strategies (REC Example)



Notes:

- VCE has build a strong renewable portfolio that generates Renewable Energy Credits in excess of minimum compliance requirements (as shown on previous slide).
- VCE is in a unique position to evaluate that long position and record high REC prices to inform its portfolio and fiscal policies.
- CCAs have taken multiple approaches to setting RPS targets based on rate competitiveness and community preference. CCAs do provide customers 100% renewable product options (e.g. VCE's Ultra-Green 100% Renewable).

Next Steps and Discussion



Item 16 – Financial Outlook (Update): Summary

Next Steps

2024 Budget

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Discussion